REMARKS/ARGUMENTS

Claims 1, 7 and 10-23 are pending, claims 14-23 having been withdrawn from consideration. By this Amendment, claims 2-4 are cancelled without prejudice or disclaimer, and claims 1, 7, 10-14, 18, 19 and 21-23 are amended. Support for the amendments to claims 1, 7, 10-14, 18, 19 and 21-23 can be found, for example, in the present specification at page 13, lines 10 to 15, and in previously presented claims 1-4, 7, 10-14, 18, 19 and 21-23. No new matter is added. In view of the foregoing amendments and following remarks, reconsideration and allowance are respectfully requested.

Withdrawn Claims

For the reasons set forth below, Applicants submit that all pending claims presently subject to examination are in condition for allowance. Because the withdrawn claims depend from, and thus recite all features of, allowable claim 1, rejoinder and allowance of the withdrawn claims are respectfully requested.

Denial of Priority Claim

The Office Action denies Applicants' priority claim to U.S. Provisional Patent Application No. 60/466,069 because the text of the provisional patent application differs from the text of the present application. *See* Office Action, page 3. Applicants submit that there is no requirement that the text of a U.S. non-provisional patent application and the text of a U.S. provisional patent application to which priority is claimed, be identical. Entitlement to priority is determined on a claim-by-claim basis, depending on whether the claims of the U.S. non-provisional patent application are adequately supported by the disclosure of the U.S. provisional patent application. The denial of Applicants' priority claim is, thus, premature.

Rejection Under 35 U.S.C. §102

The Office Action rejects claims 1-4, 7 and 13 under 35 U.S.C. §102(b) over U.S. Patent Application Publication No. US 2002/0047058 to Verhoff et al. ("Verhoff")[#]. By this Amendment, claims 2-4 are cancelled, rendering the rejection moot as to those claims. As to the remaining claims, Applicants respectfully traverse the rejection.

Claim 1 recites "[a] composition, comprising: a very low water-soluble drug; and a porous silicon material; wherein: the composition is produced by treating a mixture comprising the very low water-soluble drug and the porous silicon material with a supercritical or subcritical carbon dioxide fluid; the very low water-soluble drug has a solubility in water at 25 °C of less than 10 μg/mL prior to treatment; the porous silicon material comprises light anhydrous silicic acid, hydrated silicon dioxide, silicon dioxide, or calcium silicate; the porous silicon material is not a porous silica material having an average pore diameter of 1 to 20 nm, where a total pore volume of pores having a diameter falling within a range of ± 40% of the average pore diameter accounts for 60% or more of a volume of all of the pores of the porous silica material, and having an X-ray diffraction pattern including one or more peaks at a diffraction angle (2θ) corresponding to d of 1 nm or more; the porous silicon material has an average pore diameter of 1 to 500 nm; the porous silicon material has a specific surface area of 100 to 1,800 m^2/g; and the composition is suitable for oral administration" (emphasis added). Verhoff does not disclose or suggest such a composition.

Applicants again submit that claim 1 distinguishes over Verhoff for at least the reasons discussed in the March 15, 2010 Amendment. However, Applicants provide the following further comments in view of the April 1, 2010 Advisory Action.

[#] Applicants acknowledge with thanks the indication in the April 1, 2010 Advisory Action that the anticipation rejection will be withdrawn. Applicants submit that the following arguments address the issues of both anticipation and obviousness.

The Advisory Action asserts that Verhoff discloses using porous silica as milling media bodies at paragraphs [0140] to [0143]. *See* Advisory Action, page 2. Applicants submit that this is a misreading of Verhoff. In paragraphs [0140] and [0141], Verhoff describes inorganic materials that form the core of a polymer-coated particle. Verhoff further discloses that, after the polymer-coated particle is formed, the polymer coating can be subjected to processes that leave the coating "roughened or ridged or made porous." *See* Verhoff, paragraph [0143]. Accordingly, the passage of Verhoff identified in the Advisory Action does not disclose a porous silicon material at all, but instead discloses a porous polymer coating. The description of polymer-coated particles at paragraphs [0140] to [0143] of Verhoff would not have led a skilled artisan to the porous silicon material of claim 1.

Verhoff appears to contemplate using porous inorganic materials in combination with nonporous inorganic materials as milling media bodies. *See* Verhoff, paragraph [0110]. However, Verhoff also indicates that "porous media bodies are less tough than non-porous media bodies of the same composition," and thus a skilled artisan would not have been led to select such porous media bodies, in particular, instead of the clearly favored nonporous milling media bodies. *See* Verhoff, paragraph [0110]. Moreover, Verhoff provides absolutely no guidance regarding the characteristics of such porous media bodies. Claim 1 requires that the porous silicon material has an average pore diameter of 1 to 500 nm and a specific surface area of 100 to 1,800 m^2/g. Even if one of ordinary skill in the art were led to use a porous material by Verhoff, there is absolutely nothing in Verhoff that would have led a skilled artisan to a porous silicon material having the particular characteristics recited in claim 1. *See, e.g.*, MPEP §2144.05.II.B (citing *In re Antonie*, 195 U.S.P.Q. 6 (C.C.P.A. 1977)) (particular parameter must first be recognized as result-effective variable before determination of workable ranges can be said to be obvious variation).

Verhoff discloses a method based on the application of mechanical energy to mill a solid substrate, such as a very low water-soluble drug. *See* Verhoff, paragraph [0098]. That is, mechanical energy is applied to cause collisions between milling media bodies and the drug, which mills the drug into finer particles and improves dissolution of the drug. *See* Verhoff, paragraph [0102]. There is nothing in Verhoff relating to the idea of improving dissolution of a very low water-soluble drug by allowing the drug to be adsorbed into pores of inorganic porous materials, such as the porous silicon material of claim 1, by treatment with a supercritical or subcritical carbon dioxide fluid. Thus, even if Verhoff separately discloses aspects of composition of claim 1, there is nothing in Verhoff that would have led a skilled artisan to combine those aspects as would be required to obtain the composition of claim 1. *See Ex parte Whalen*, 89 USPQ2d 1078, 1084 (Bd. Pat. App. & Int. 2008) ("[t]he *KSR* Court noted that obviousness cannot be proven merely by showing that the elements of a claimed device were known in the prior art; it must be shown that those of ordinary skill in the art would have had some 'apparent reason to combine the known elements in the fashion claimed'").

As indicated above, claim 1 is amended to require that the composition is suitable for oral administration. The composition of claim 1 is obtained by treating a mixture including a porous silicon material and a very low water-soluble drug with a supercritical or subcritical carbon dioxide fluid. This treatment allows the very low water-soluble drug to dissolve in the carbon dioxide fluid and be adsorbed into the pores of the porous silicon material. Upon dissolution and adsorption, the drug takes on an amorphous form, which changes properties of the drug, including increasing its solubility. Using supercritical or subcritical carbon dioxide as a fluid is important to provide a composition suitable for oral administration, as now required by claim 1. Using an organic solvent, such as chloroform, to dissolve the very low water-soluble drug instead of the carbon dioxide fluid would not be desirable in

preparation of a composition for oral administration because some organic solvent may remain in the resulting composition even after removing the organic solvent by drying. By contrast, carbon dioxide does not remain in a composition as in claim 1 because of carbon dioxide vaporizes – a drying step is not required. Further, even if carbon dioxide remains in the composition, trace amounts are safe in compositions for oral administration. The combination of features in claim 1 provides clear benefits. There is nothing in Verhoff that would have led a skilled artisan to such combination.

As explained, claim 1 is not anticipated by Verhoff. Claims 7 and 13 depend from claim 1 and, thus, also are not anticipated by Verhoff. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Rejection Under 35 U.S.C. §103

The Office Action rejects claims 1-4, 7 and 10-13 under 35 U.S.C. §103(a) over Verhoff in view of U.S. Patent No. 5,538,728 to Yanaki et al. ("Yanaki"). By this Amendment, claims 2-4 are cancelled, rendering the rejection moot as to those claims. As to the remaining claims, Applicants respectfully traverse the rejection.

For the reasons discussed above, Verhoff fails to disclose or suggest each and every feature of claim 1. Yanaki does not remedy the deficiencies of Verhoff. Yanaki is cited for its alleged disclosure of a pharmaceutical composition including a complex of a water-swellable silicate mineral and a drug. *See* Office Action, pages 8 to 9. However, Yanaki, like Verhoff fails to disclose or suggest a composition including a porous silicon material as recited in claim 1.

As explained, claim 1 would not have been rendered obvious by Verhoff and Yanaki. Claims 7 and 10-13 depend from claim 1 and, thus, also would not have been rendered

obvious by Verhoff and Yanaki. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Conclusion

For the foregoing reasons, Applicants submit that claims 1, 7 and 10-23 are in condition for allowance. Prompt reconsideration and allowance are respectfully requested.

Respectfully submitted,

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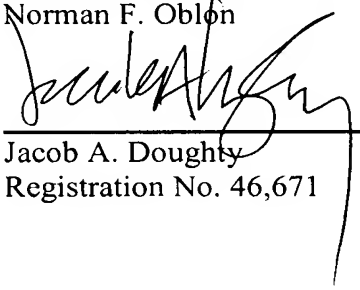

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